RMI Ports Authority

2006 Pacific Aviation Directors Workshop

Guam Marriott Resort and Spa

April 4-6, 2006

Tumon, Guam

RMIPA Airport Projects

- Majuro Runway Rehabilitation Project
- Apron/Taxiway Upgrading Project
- Aircraft Water Rescue Study
- ARFF/SAWRS Building Project
- Airport Master Plan
- Road Re-alignment Project
- Security Perimeter Fencing Project

Majuro Runway Rehabilitation Project

- Bids package issued on March 24, 2005
- Bid period started from April 4 to May 31, 2005
- Bids were received from four companies
- Project awarded to Anderson Asphalt Ltd., based in Hong Kong
- Construction contract formally signed on August 26, 2006 in Majuro, RMI
- Total Project Cost: $16.3m

Majuro Runway Rehabilitation Project

- Summary of Scope of Works
  - Construction will be done mostly at night from 10:00 pm to 6:30 am local time, Monday to Friday
  - On weekends, runway closure times are from 1:00 pm Saturday to 6:30 am Monday
  - Preparation of the existing asphalt surface and construction of the runway asphalt overlay (4”-6”)
  - Construction of a new turnaround bay at the 07 runway end with edge lights

Majuro Runway Rehabilitation Project

- Summary of Scope of Works
  - Replacement of existing cables for runway lights
  - Construction of new runway shoulders
  - Protection of existing water catchment areas adjacent to the runway against contamination
  - Runway grooving and application of all runway markings
  - Improve frangibility of breather pipes

Asphalt Concrete (AC) Plant

Construction Progress

- Contractor is fully mobilized on site
- Asphalt Concrete Plant has been erected (about a mile west of the airport)
- Plant is Marini continuous mixing plant with a maximum output of 330 tons per hour
- Mixed AC is stored in large insulated bins that have a storage capacity of 200 tons

AC Plant

AC Plant

AC Plant

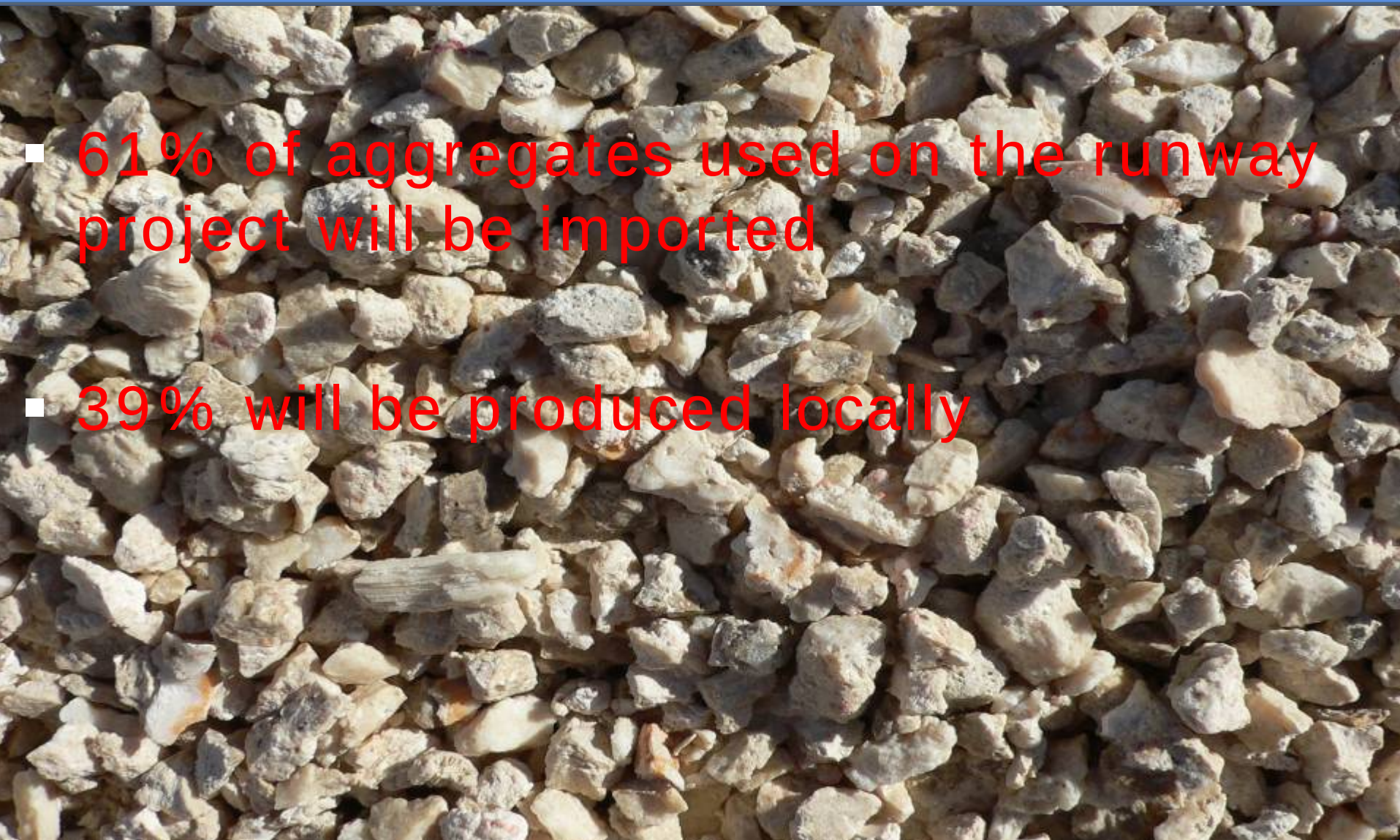
Majuro Runway Rehabilitation Project

- Prior to paving works, the AC plant will commence production to fill the storage bins
- Throughout the paving, plant operators will ensure that the storage bins remain nearly fill, in order to ensure that if there was a plant failure this mixed AC could be utilized to construct the temporary ramps which are required to allow the runway to open on schedule

Stockpiling Area

Stockpiling Area

Local Aggregates



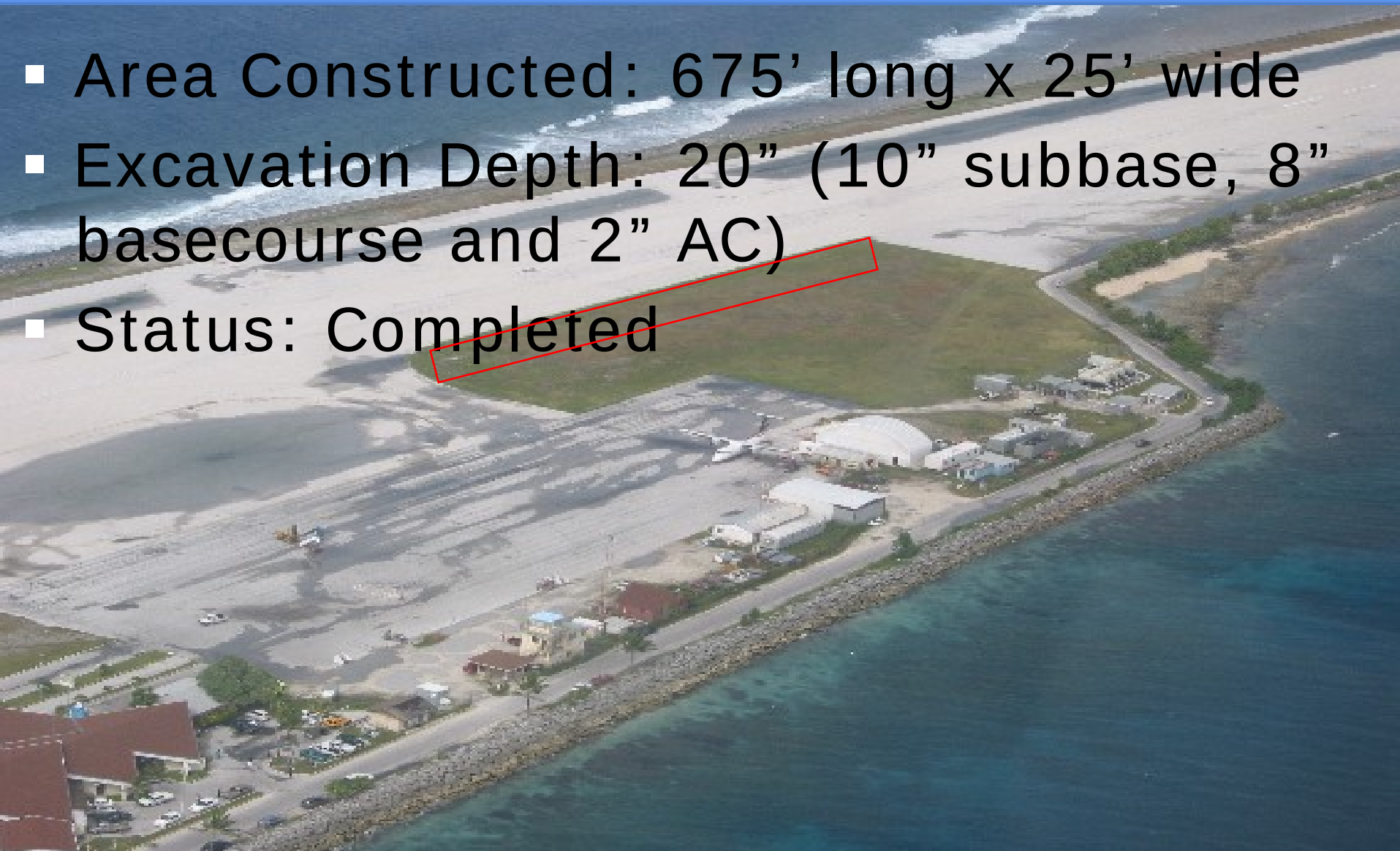
- 61% of aggregates used on the runway project will be imported
- 39% will be produced locally

New Runway Shoulder

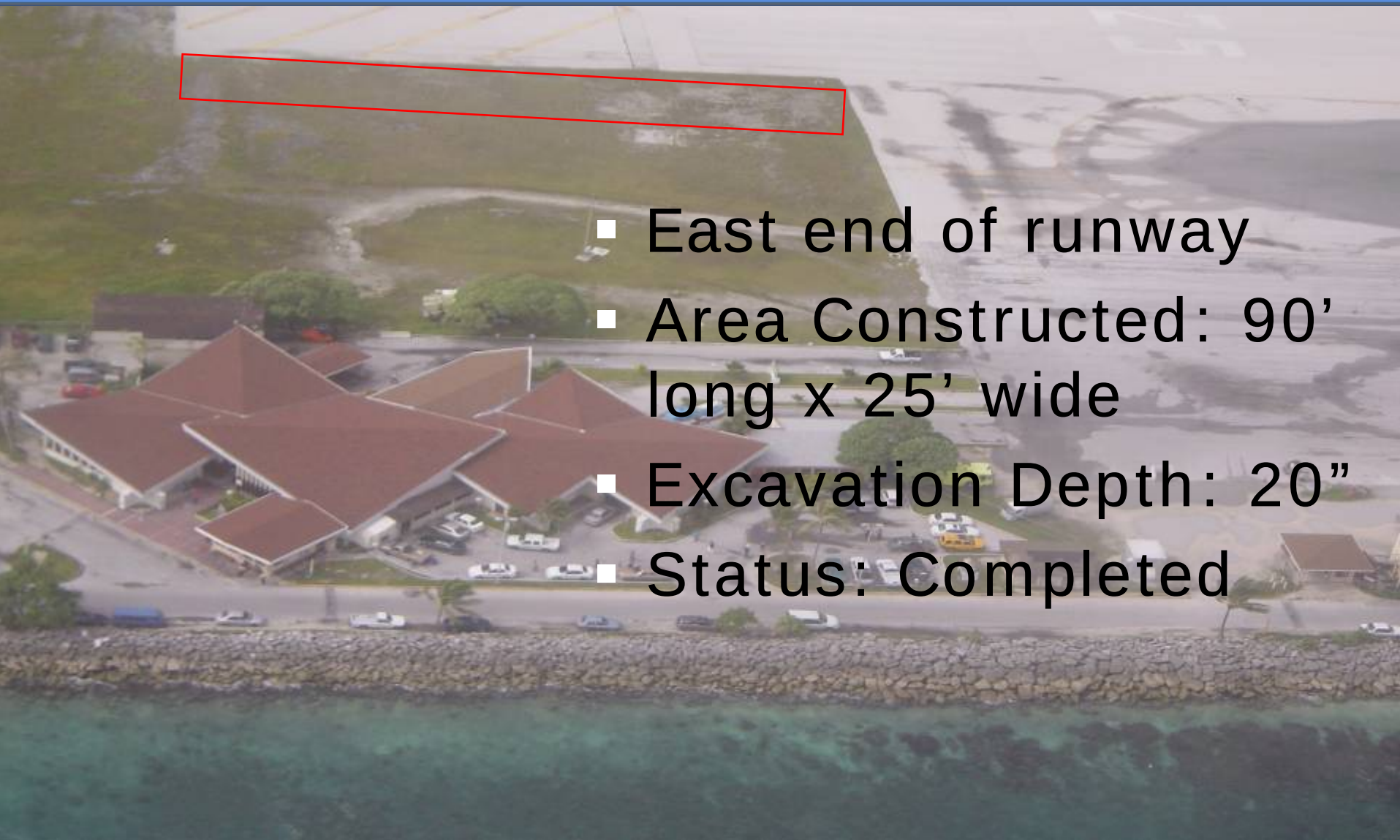
New Runway Shoulder

New Runway Shoulder

- Area Constructed: 675’ long x 25’ wide
- Excavation Depth: 20” (10” subbase, 8” basecourse and 2” AC)
- Status: Completed



Additional Shoulder – RNWY 25



- East end of runway
- Area Constructed: 90’ long x 25’ wide
- Excavation Depth: 20”
- Status: Completed

Additional Shoulder – RNWY 25

Additional Shoulder – RNWY 25

Additional Shoulder – RNWY 25

Turnaround Bay – Runway 07

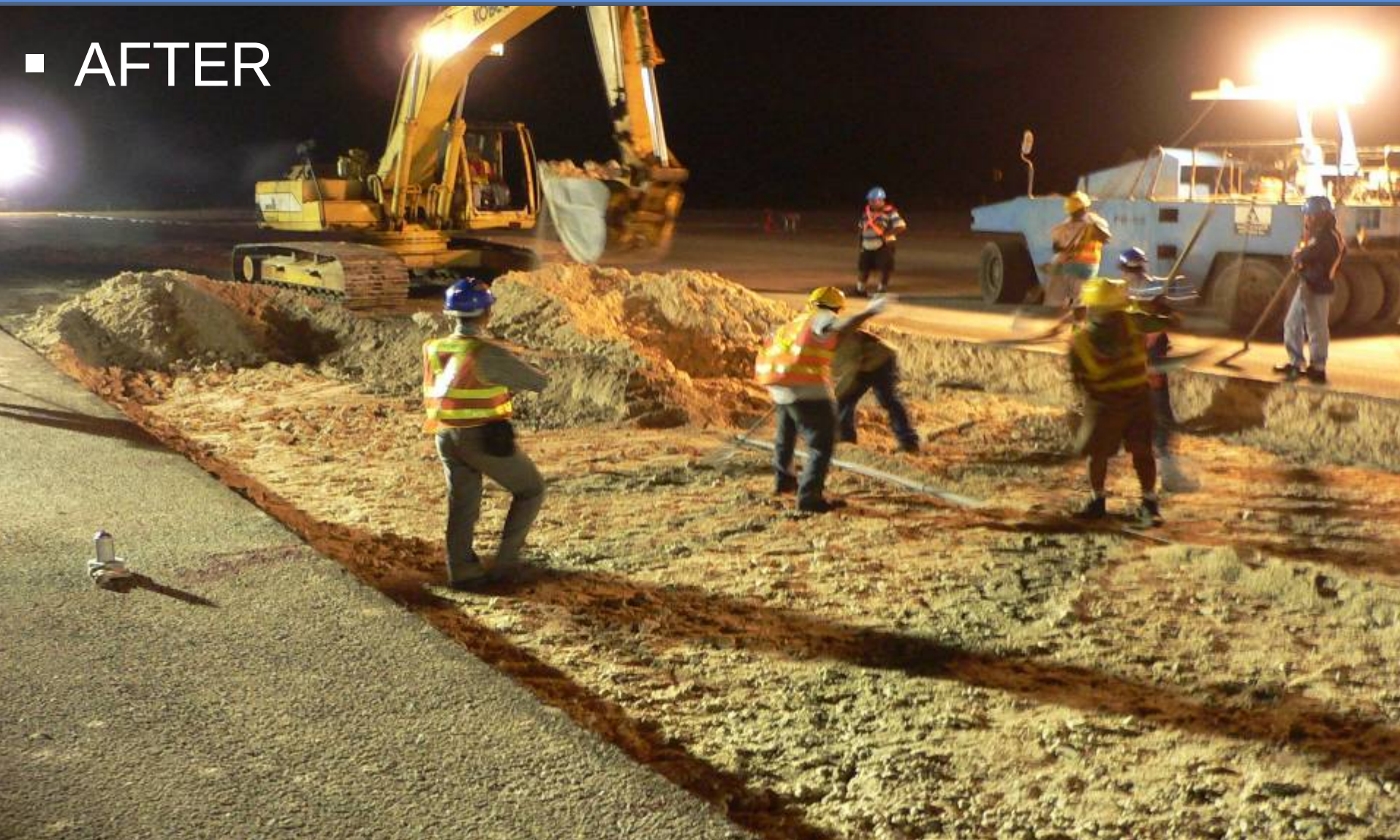
- BEFORE

Turnaround Bay – Runway 7

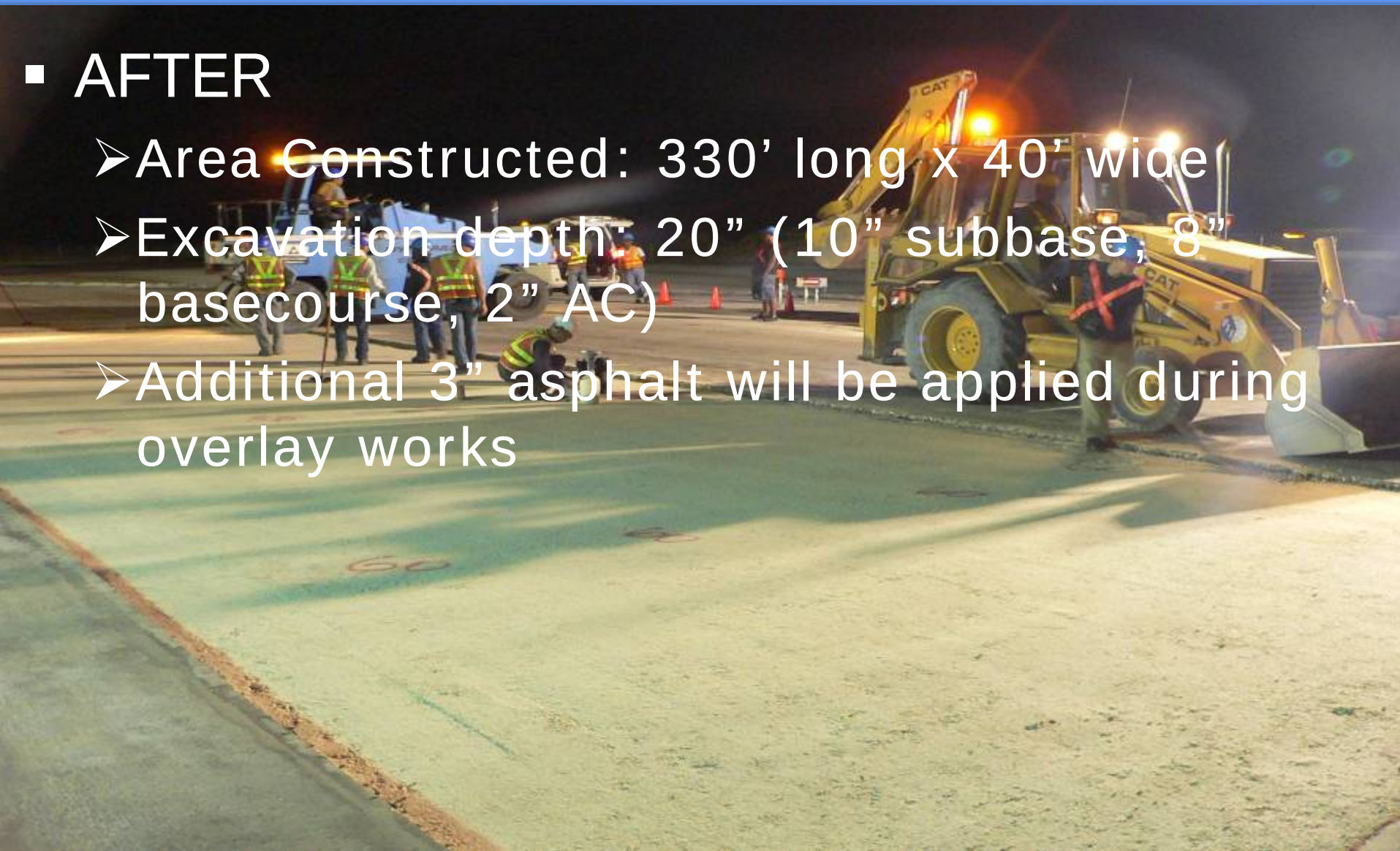
- BEFORE

Turnaround Bay – Runway 07

- AFTER



Turnaround Bay – Runway 07

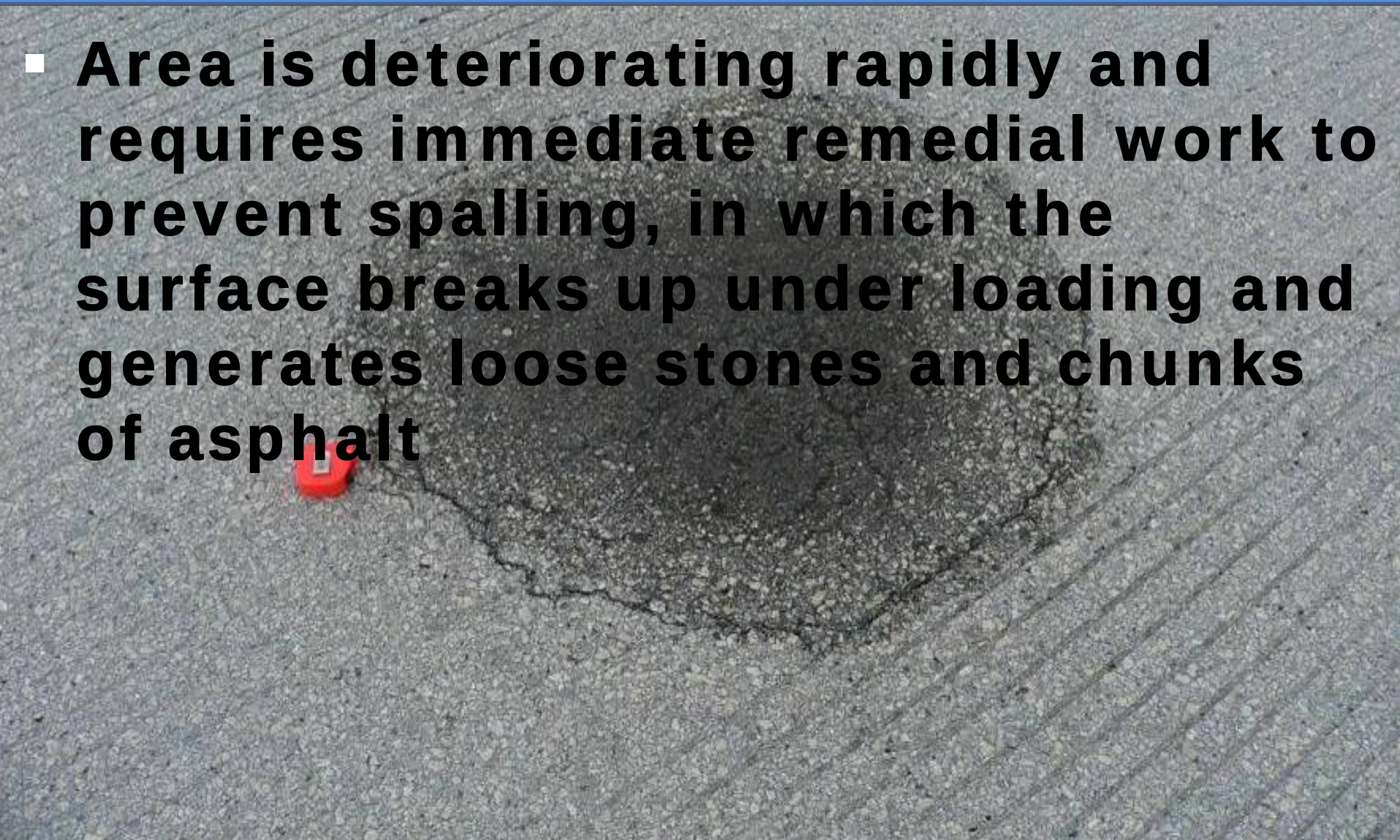


- AFTER
  - Area Constructed: 330’ long x 40’ wide
  - Excavation depth: 20” (10” subbase, 8” basecourse, 2” AC)
  - Additional 3” asphalt will be applied during overlay works

Underground Water Pipes/Holes

Pavement Rutting

Localized Pavement Rutting



- **Area is deteriorating rapidly and requires immediate remedial work to prevent spalling, in which the surface breaks up under loading and generates loose stones and chunks of asphalt**

Severe raveling on Runway 7

Surface Erosion on Runway 7

A runway centerline showing signs of raveling and weathering

This surface area is located on Runway 7 where the majority of aircraft takeoffs and landings takes place

Cracks have increased, both in number and size

Remedial Work

- Areas with rutting problems were excavated and reconstructed prior to asphalt overlay

- This was necessary to ensure that the areas do not continue to rut in the future

Remedial Work

- For areas with severe raveling and cracking problems, contractor milled out a minimum of 50mm (2 inches) of the existing AC surface and replaced it with new AC prior to the new overlay surface

- If left untreated, the existing large cracks have the potential to reflect through the new AC overlay within 3-5 years

Milling Work

New Asphalt Overlay

New Asphalt Overlay

New Asphalt Overlay

New Asphalt Overlay

- Size of Overlay Area: 8,300’ x 150’, and an additional 50’ for shoulders (25’ each side)
- Asphalt thickness varies from 3 to 6 inches

Spill Absorbent Booms

Secondary Spill Containment

How Effective are the Booms?

- During paving one night, it unexpectedly rained right after tack coat was applied onto a milled area
- Emulsion from the tack coat was initially contained in the milled area; contractor used sweeper truck to suck the water out of the area
- Problem was that the rained continued through the night and the emulsion finally spilled out of the milled area and started flowing towards the water catchment

Are the Booms Effective?

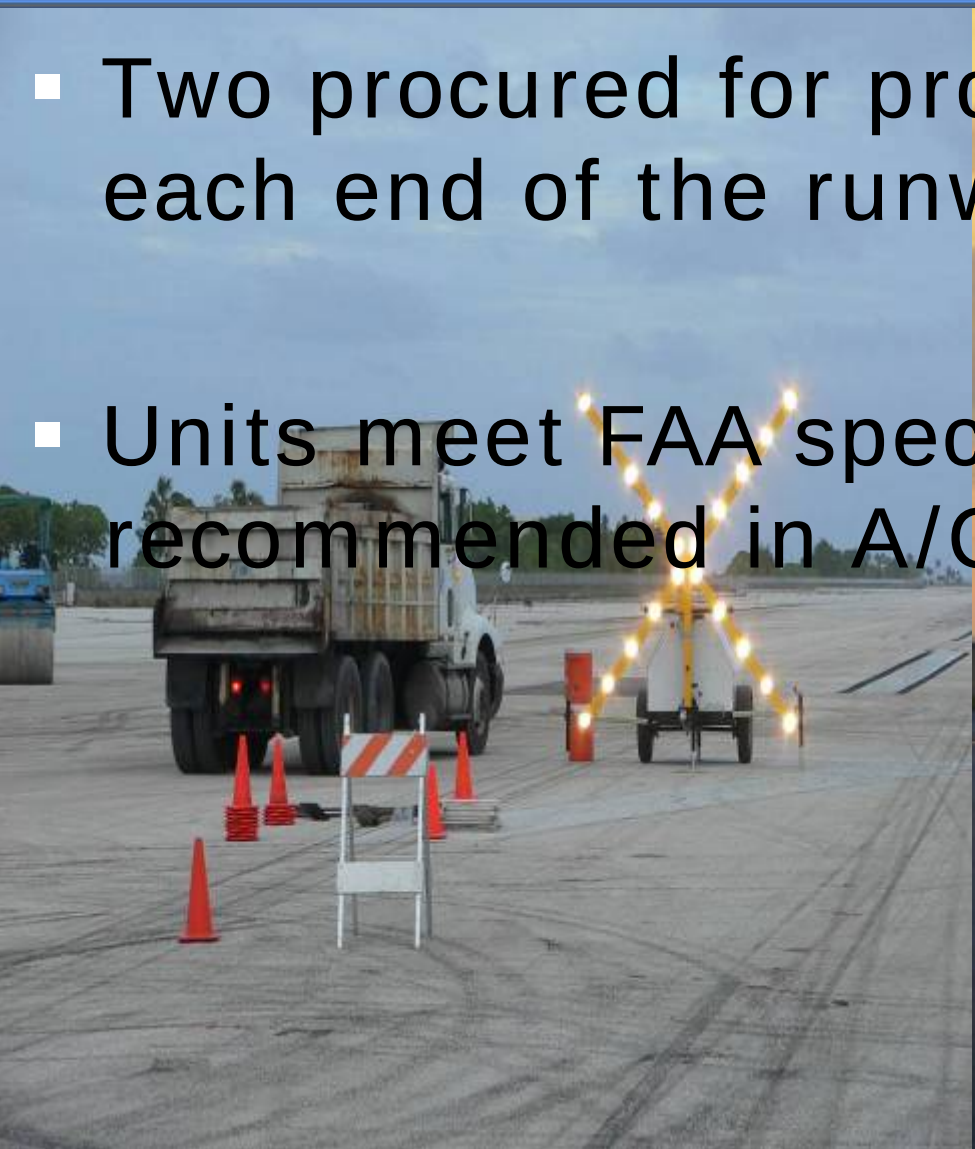
- A large quantity of the emulsion was absorbed by the booms, but some still reached the water catchment
- Procedure in place for heavy rain; local EPA to be contacted and pump to water reservoirs to be turned off
- EPA tested the water quality and gave the water catchment a clean bill of health

YES

Spill Absorbent Booms

Lighted Runway Closure Xs

- Two procured for project, one placed at each end of the runway
- Units meet FAA specifications as recommended in A/C 5345-55



Majuro Runway Rehabilitation Project

- Revised Project Schedule:
  - Original completion date delayed
  - Delays due to mechanical problems with plant and equipment; (remoteness of the island)
  - New completion date late May/June 2006
  - Delay will not impact additional Continental flights planned for start-up in June 2006

Apron/Taxiway Upgrade Project

Apron/Taxiway Upgrade Project

- Summary of Scope of Works
  - Asphalt concrete overlay of the existing apron and taxiways
  - Upgrading of existing apron drainage systems to reduce water ponding
  - Construction of a concrete hardstand on the existing apron for aircraft refueling and loading

Apron/Taxiway Upgrade Project

- Summary of Scope of Works
  - Hardstand will have its own drainage system for capturing and containing fuel spills
  - Construct new taxiway shoulders
  - Construct new asphalt surface for unpaved areas extending from the main vehicle entrance gate to the apron edge and extending to the designated staging area for emergency response vehicles

Apron/Taxiway Upgrade Project

- Summary of Scope of Works
  - Provide new asphalt surface for GSE area to link with apron to stop FOD
  - Design and installation of light posts to provide adequate illumination of the apron
  - Installation of new hold position signs (lighted) for both taxiway access points

Apron/Taxiway Upgrade Project

Apron/Taxiway Upgrade Project

- AE/CM contract approved by FAA
- Soon to be signed by RMI within 2 weeks

Aircraft Water Rescue Study

- Consultant: Armen DerHohannesian & Associates, LLC

- The objective of the project is to develop a comprehensive aircraft water rescue plan for AKIA by:
  - Undertaking a comprehensive inventory of existing conditions at AKIA, and identifying roles of stakeholders, mutual aid agencies and outside resources

Aircraft Water Rescue Study

- Assessing existing conditions with regard to the capabilities of the entire response “community”, e.g. RMIPA ARFF staff, city fire, hospital, and other mutual aid partners

- Establishing ARFF staff responsibilities and performance standards

- Identifying facilities, apparatus support equipment and supplies needed to support the water rescue program, e.g. water rescue boat, flotation devices, boat launching ramp(s), etc.

Aircraft Water Rescue Study

- Identifying a Training Program for the water rescue plan, which will be used as a basis for future Table Top and Tri-annual exercises

- Identifying the number of ARFF personnel needed on-board a rescue boat, keeping in mind what the resulting impact will be on the overall ARFF complement with regard to maintaining FAR Part 139 Index requirements (should airport be closed or opened?)

Aircraft Water Rescue Study

- Developing an Implementation Plan for the Aircraft Water Rescue Plan over a five (5) year period
- Implementation Plan will include estimated costs for a rescue boat, launching ramps and other essential water rescue equipment.

- AWR Consultant will also provide input regarding the siting and layout of the new ARFF/SAWRS building for AKIA, keeping in mind that the new building's ARFF response times for FAR Part 139 must be maintained

Aircraft Water Rescue Study

- AWR Program shall be developed in conformance with the requirements of FAR Part 139 § 325 and FAA Advisory Circulars 150/5200-31A and 150/5210-13B.
- RMIPA and AWR consultant anticipate presenting final draft reports to FAA in June 2006
- Once approved, AWR Program will be incorporated into AKIA's Airport Emergency Plan

ARFF/SAWRS Building Project

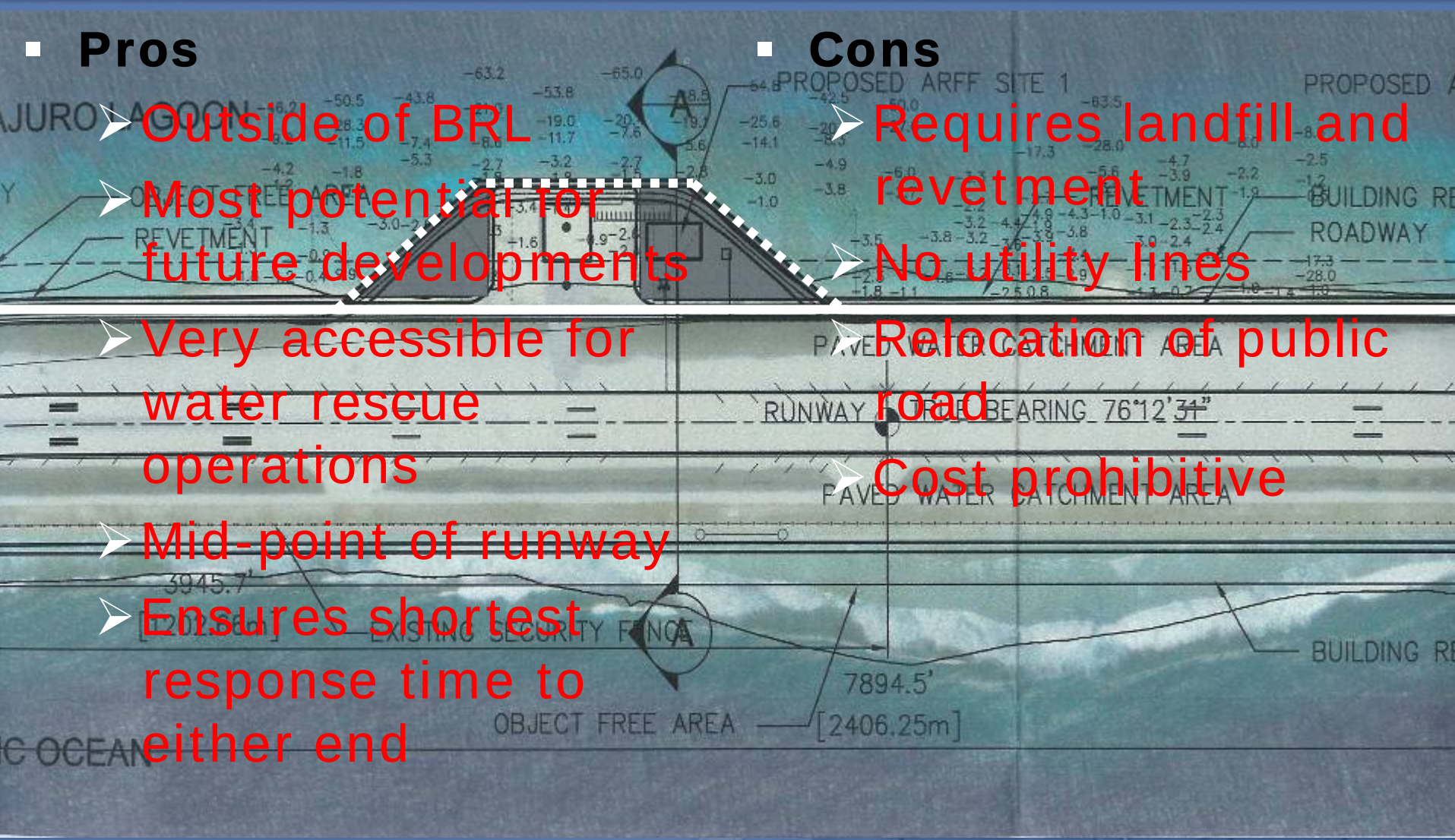
- Project behind schedule
- Main contributing factor was selecting site for the new building
- Challenge: very limited land space available at AKIA
- RMIPA identified three potential sites at the airport
- Lyon Associates conducted a site location evaluation of the three proposed sites

ARFF/SAWRS Building Project

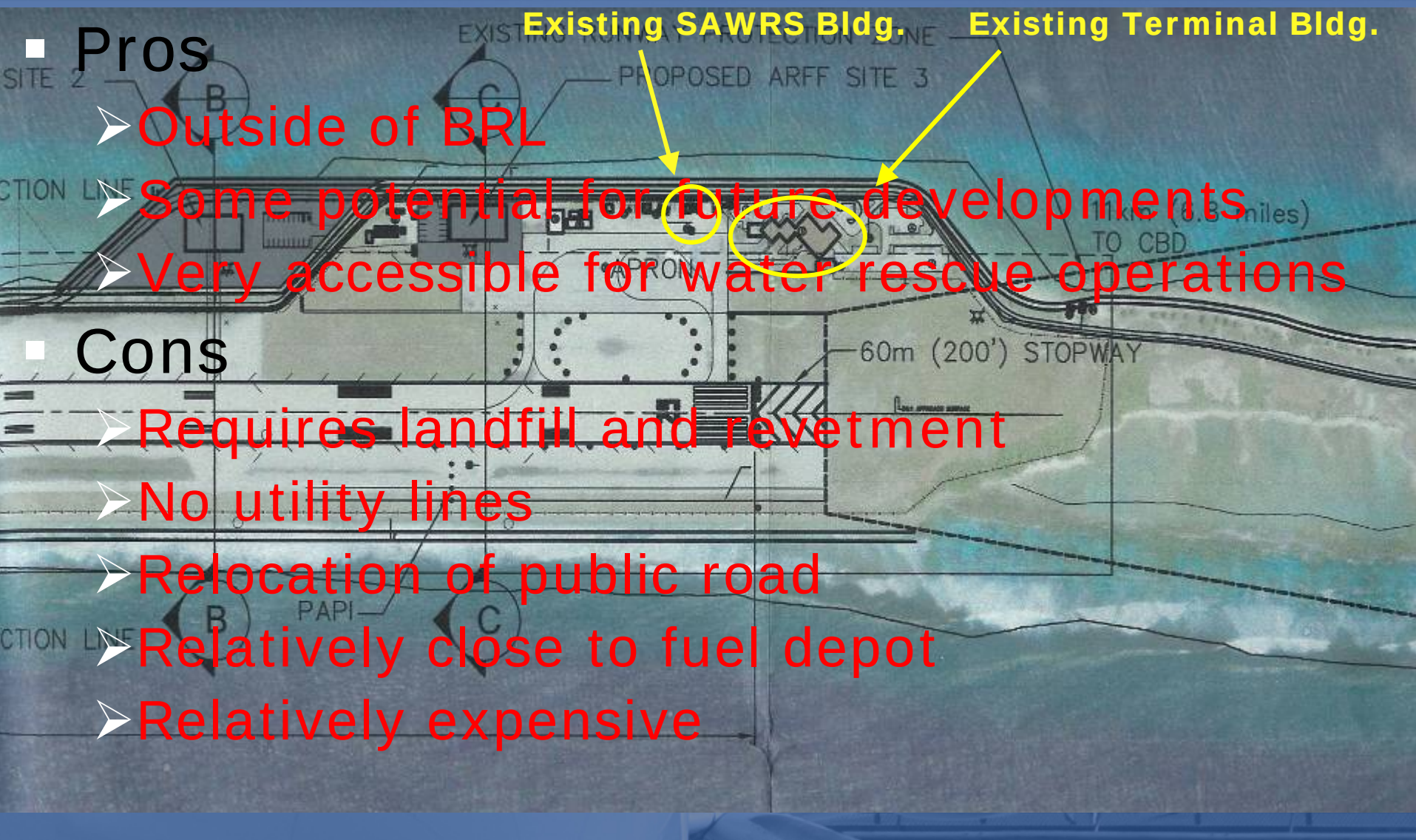
- Report with site recommendation was presented to FAA and RMI Government
- Report outlines pros/cons of each site in terms of cost, safety, station operational effectiveness, and response time
- Another element in the site evaluation is the Aircraft Water Rescue Study
  - Impact on building design to accommodate possible rescue boat
  - Location of boat launches/ramps

ARFF/SAWRS Building Project Site 1

- **Pros**
  - Outside of BRL
  - Most potential for future developments
  - Very accessible for water rescue operations
  - Mid-point of runway
  - Ensures shortest response time to either end
- **Cons**
  - Requires landfill and revetment
  - No utility lines
  - Relocation of public road
  - Cost prohibitive



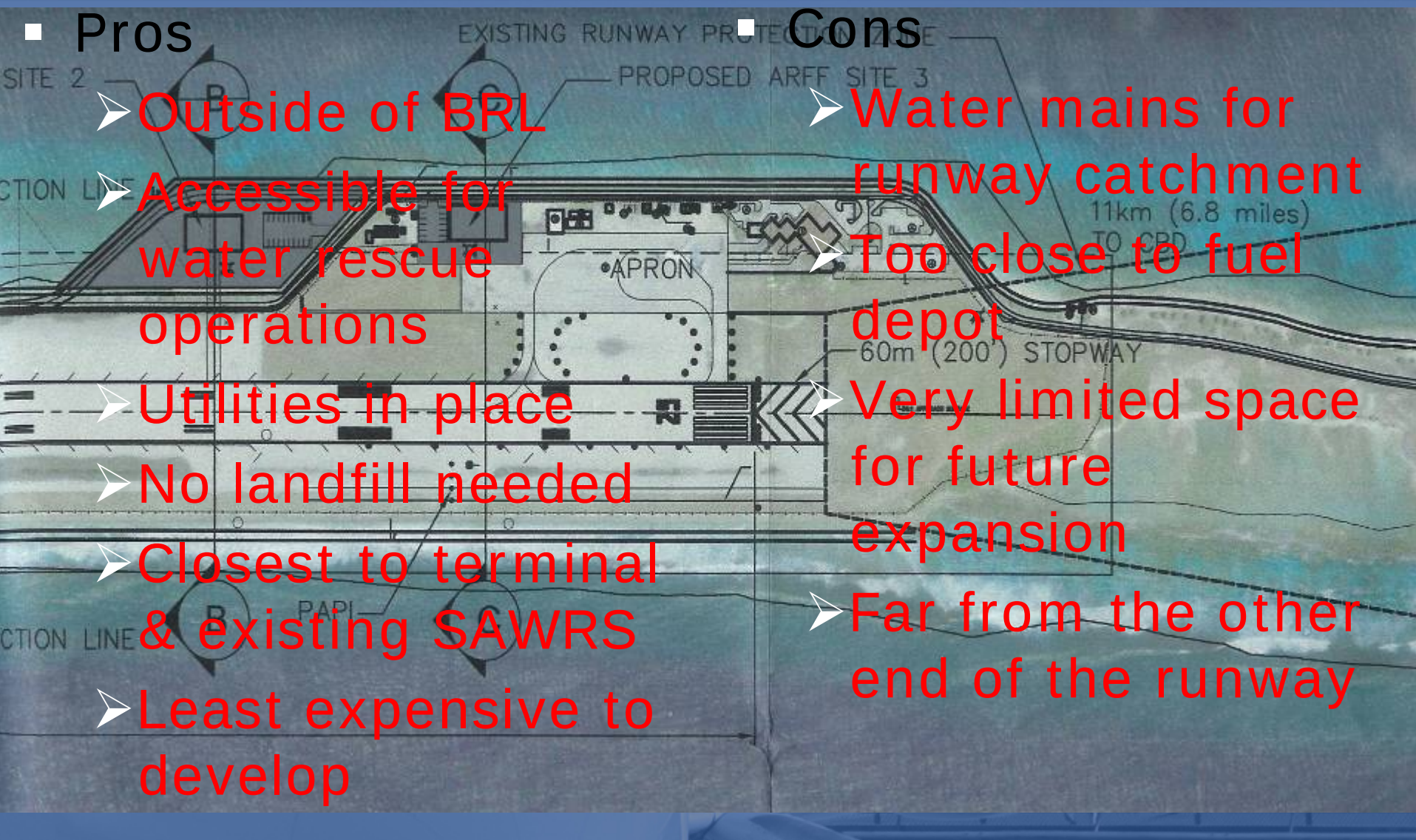
ARFF/SAWRS Building Project Site 2



- Pros
  - Outside of BRL
  - Some potential for future developments
  - Very accessible for water rescue operations
- Cons
  - Requires landfill and revetment
  - No utility lines
  - Relocation of public road
  - Relatively close to fuel depot
  - Relatively expensive

ARFF/SAWRS Building Project Site 3

- Pros
  - Outside of BRL
  - Accessible for water rescue operations
  - Utilities in place
  - No landfill needed
  - Closest to terminal & existing SAWRS
  - Least expensive to develop
- Cons
  - Water mains for runway catchment
  - Too close to fuel depot
  - Very limited space for future expansion
  - Far from the other end of the runway



ARFF/SAWRS Building Project

- Site Recommendation
  - SITE 1
  - Salient factor: location; being located at the middle of the runway, it provides the shortest response time to anywhere within the airport
- AWR Consultant initial assessment supports locating new ARFF/SAWRS building on Site 1
- Both the RMI Government and FAA have concurred on the site recommendation

ARFF/SAWRS Building Project

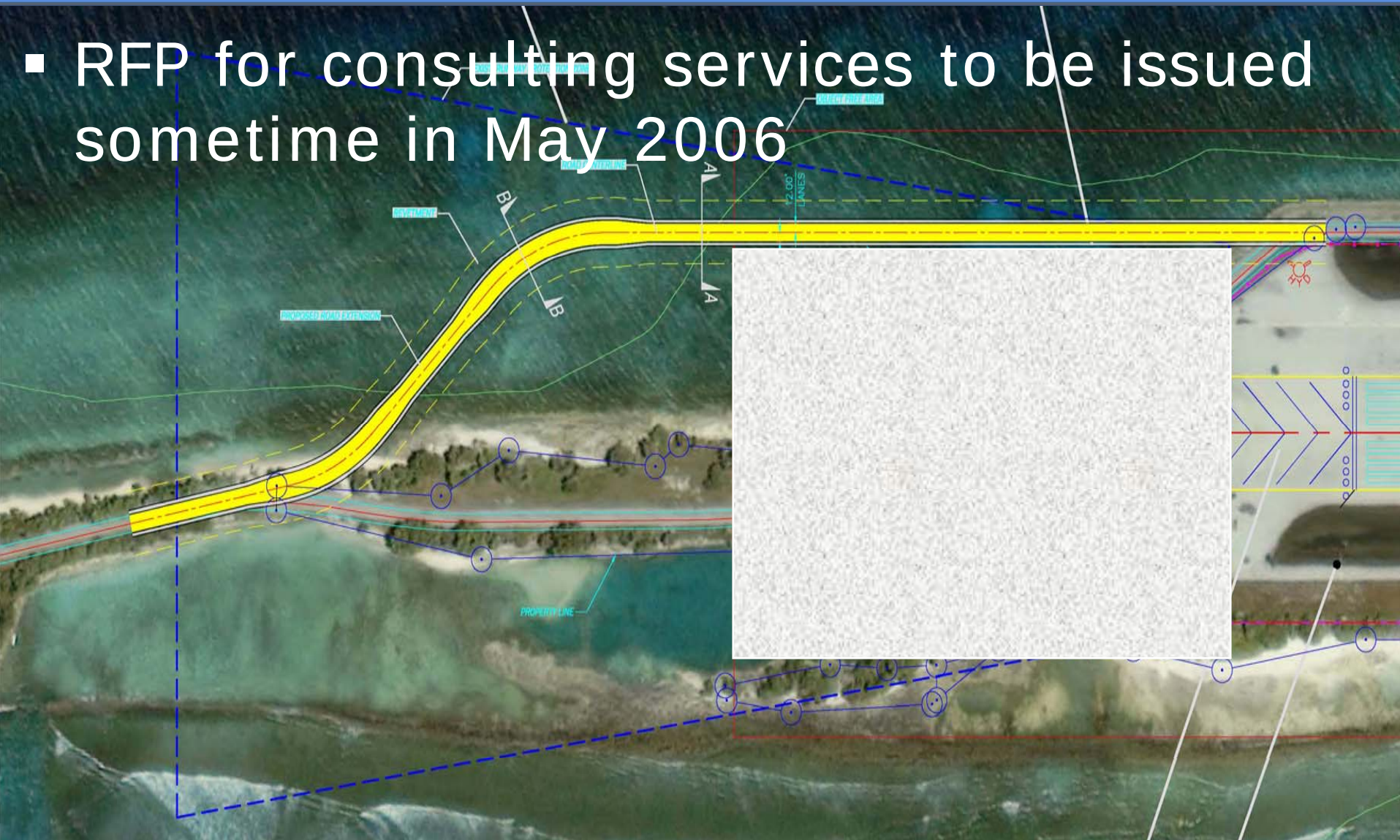
- AE/CM consultant selected
- Scope of work and fee proposal presently under negotiation
- Submission of final draft to FAA in April 2006

Airport Master Plan

- Develop an Airport Master Plan for AKIA
- Part of the scope of services for this project will entail a Wildlife Hazard Assessment and development of Wildlife Hazard Management Plan
- RMIPA anticipates issuing RFQ/RFP for the project in early May 2006

Road Re-alignment Project

- RFP for consulting services to be issued sometime in May 2006



Security Perimeter Fencing Project

- May 2006 is targeted for issuance of RFP for consulting services

Any Questions?

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